Amendments to the Claims

Please amend the claims as follows:

1. (Previously presented) A method for improving burst acquisition in a digital communication device comprising:

receiving a signal; and

performing a lower order detection process including a lower order modulation detection and correlation on a portion of said received signal, wherein said lower order process produces a lower order synchronization word indication result and a lower order synchronization word timing result;

performing a higher order detection process including a higher order modulation detection and correlation on said portion of said received signal, wherein said higher order detection process produces a higher order synchronization word indication result and a higher order synchronization word timing result, said higher order detection process being performed when said lower order synchronization word indication result is present; and

modifying said synchronization word timing result to be said lower order synchronization word timing result when said higher order synchronization word indication is absent, and to be said higher order synchronization word timing result when said higher order synchronization word indication is present.

2. (Previously presented) The method of claim 1, wherein said lower order detection process comprises performing a biphase shift keying (BPSK) sync word correlation process.

3. (Previously presented) The method of claim 1, wherein said higher order detection process comprises performing a quadrature phase shift keying (QPSK) sync word correlation process.

4. (Previously presented) The method of claim 1, wherein the step of modifying includes using said result of said higher order detection process to modify said one or more detection thresholds of said lower order detection process.

5. canceled.

6. (Previously presented) The method of claim 1, wherein if said result from said higher order detection process comprises a CQPSK sync word result, using said CQPSK sync word correlation result to demodulate said burst.

7. canceled.

8. (Previously presented) The method of claim 1, further comprising performing said lower order detection process prior to said higher order detection process.

9. (Original) The method of claim 1, further comprising performing a squelching function on said received signal prior to said sync word search.

10. (Original) The method of claim 1, wherein said sync word search is not performed until a

multi-step burst detection process detects a burst.

11. (Currently amended) A method for improving burst detection in a digital receiver device, comprising:

receiving a signal; and

performing a multiple persistent burst detection process on said signal;

wherein the multiple persistent detection process further comprises:

estimating a signal energy value over a portion of said signal;

comparing said signal energy value to a designated signal energy threshold value;

estimating a signal carrier to noise plus interference ratio (CIR) value over the same portion of said signal;

comparing said CIR value to a predetermined CIR threshold value; and

signaling a valid burst detection if said signal energy value exceeds said predetermined signal energy threshold value for a first predetermined period of time and said CIR value simultaneously exceeds said predetermined CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration,

wherein said predetermined signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected, said signal being initially detected if the estimated signal energy exceeds said first signal energy threshold, and said signal becoming subsequently undetected if the estimated signal energy falls below said second signal energy threshold.

12. (canceled)

13. (canceled)

14. (Currently amended) A method for improving burst detection in a digital receiver device, comprising:

receiving a signal; and

performing a multiple persistent burst detection process on said signal;

wherein the multiple persistent detection process further comprises:

estimating a signal energy value over a portion of said signal;

comparing said signal energy value to a designated signal energy threshold value;

estimating a signal carrier to noise plus interference ratio (CIR) value over the same portion of said signal;

comparing said CIR value to a predetermined CIR threshold value; and

signaling a valid burst detection if said signal energy value exceeds said predetermined signal energy threshold value for a first predetermined period of time and said CIR value simultaneously exceeds said predetermined CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration,

~~The method of claim 11,~~ wherein said predetermined CIR threshold value comprises a first CIR threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second CIR threshold that is utilized to detect the absence of said signal if said

signal is currently detected, said signal being initially detected if the estimated signal CIR exceeds said first CIR threshold, and said signal becoming subsequently undetected if the estimated signal CIR falls below said second CIR threshold.

15. (canceled)

16. (Previously presented) A digital communications system comprising:

a tuner; and

a demodulator;

wherein said demodulator is configured to receive a signal and perform a lower order detection process including a lower order modulation detection and correlation on a portion of said received signal, wherein said lower order process produces a lower order synchronization word indication result and a lower order synchronization word timing result;

selectively performing a higher order detection process including a higher order modulation detection and correlation on said portion of said received signal, wherein said higher order detection process produces a higher order synchronization word indication result and a higher order synchronization word timing result, said higher order detection process being performed when said lower order synchronization word indication result is present; and

modifying said synchronization word timing result to be said lower order synchronization word timing result when said higher order synchronization word indication is absent, and to be said higher order synchronization word timing result when said higher order synchronization word indication is present.

17. (Previously presented) The digital communications system of claim 16, wherein said lower order detection process comprises a biphase shift keying (BPSK) sync word correlation process and said higher order detection process comprises a quadrature phase shift keying (QPSK) sync word correlation process.

18. canceled.

19. (Previously presented) The digital communications system of claim 16, wherein said demodulator is further configured to perform said lower order detection process prior to said higher order detection process.

20. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform a squelching function on said received signal prior to said sync word search.

21. (original) The digital communications system of claim 16, wherein said demodulator is further configured to perform said sync words search only after a multi-step burst detection process detects a burst.

22. (Currently amended) A digital communications system comprising:

a tuner; and

a demodulator; wherein said demodulator is configured to receive a signal and perform a multiple persistent burst detection process on said received signal wherein the multiple persistent burst detection process further comprises:

estimating a signal energy value over a portion of said signal;

comparing said signal energy value to a programmable signal energy threshold value;

estimating a signal carrier to noise plus interference ratio (CIR) value over the same portion of said signal;

comparing said CIR value to a predetermined CIR threshold value; and

signaling a valid burst detection if said signal energy value exceeds said predetermined signal energy threshold value for a first predetermined period of time and said CIR value simultaneously exceeds said predetermined CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration,

wherein said predetermined signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected, said signal being initially detected if the estimated signal energy exceeds said first signal energy threshold, and said signal becoming subsequently undetected if the estimated signal energy falls below said second signal energy threshold.

23. (canceled)

24. (canceled)

25. (Currently amended) A digital communications system comprising:

a tuner; and

a demodulator; wherein said demodulator is configured to receive a signal and perform a multiple persistent burst detection process on said received signal wherein the multiple persistent burst detection process further comprises:

estimating a signal energy value over a portion of said signal;

comparing said signal energy value to a programmable signal energy threshold value;

estimating a signal carrier to noise plus interference ratio (CIR) value over the same portion of said signal;

comparing said CIR value to a predetermined CIR threshold value; and

signaling a valid burst detection if said signal energy value exceeds said predetermined signal energy threshold value for a first predetermined period of time and said CIR value simultaneously exceeds said predetermined CIR threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of an expected burst duration,

~~The digital communications system of claim 22,~~ wherein said predetermined CIR threshold value comprises a first CIR threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second CIR threshold that is utilized to detect the absence of said signal if said signal is currently detected, said signal being initially detected if the estimated signal CIR exceeds said first CIR threshold, and said signal becoming subsequently undetected if the estimated signal CIR falls below said second CIR threshold.

26. (canceled)

27. (Original) The digital communications system of claim 22, wherein said system comprises a digital receiver.